Demographic Change: Impact on Hospital Admissions and Expenditures in Germany

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Outline

- Background
- Aim
- Methods
- Results
- Conclusion
Over the next 30 years the population of most western countries will age rapidly.

Demographic trends are long-term phenomena and not over yet.
Considerable consequences on the health care system have to be expected:
- substantial increase in morbidity
- driving demand of health care services
- growth of relating expenditures

Today, a total of 63.9 bn Euros (27% of the whole health expenditures) originate in German hospitals.
To develop a projection of future hospital admissions and associated costs for Germany.
Methods

• Data sources (German Federal Statistical Office)
  – population projections to 2040 (12th coordinated population projection)
  – diagnosis statistics (2007)
  – cost of illness data (2006)

• Today’s diagnosis frequencies in hospitals and related costs were transferred to the projected populations until 2040

• Projection considers age- and sex-specific differences

• Results refer to subset diagnoses within the ICD-10-classification

• Respective costs were inflation-adjusted with 2% per annum
Results: hospital admissions I

• By 2040, hospital admissions will increase by 12% compared to 2010

• Most of all hospital stays belong to diseases of the circulatory system with 2,674,118 admissions in 2010 (+33% until 2040)

• Endocrine, nutritional and metabolic diseases exhibit lower levels of admissions with 454,390 in 2010 (+25% until 2040)

• Furthermore admissions will increase with regard to
  – neoplasms: 18% (318,586 cases)
  – diseases of the respiratory system: 15% (155,220 cases)
  – diseases of the digestive system: 14% (228,688 cases)
  – certain infectious and parasitic diseases: 11% (51,341 cases)
  – diseases of the nervous system: 12% (78,103 cases)

• In contrast to previous diseases hospital stays because of mental and behavioural disorders will decrease by 9% until 2040
  → although in this diagnosis group dementia-related stays are expected to rise by estimated 70%
Results: hospital admissions II

A00-B99 Certain infectious and parasitic diseases
C00-D48 Neoplasms
E00-E90 Endocrine, nutritional and metabolic diseases
F00-F99 Mental and behavioural disorders
G00-G99 Diseases of the nervous system
H00-I99 Diseases of the circulatory system
J00-J99 Diseases of the respiratory system
K00-K93 Diseases of the digestive system
M00-M99 Diseases of the musculoskeletal system and connective tissue

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**Results: hospital costs**

- Overall expenditures for hospitalisations will increase until 2040

<table>
<thead>
<tr>
<th>Category</th>
<th>2010</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>A00-B99 Certain infectious and parasitic diseases</td>
<td>1.5 bn €</td>
<td>2.0 bn €</td>
<td>2.5 bn €</td>
<td>3.1 bn €</td>
</tr>
<tr>
<td>C00-D48 Neoplasms</td>
<td>9.1 bn €</td>
<td>12.2 bn €</td>
<td>15.8 bn €</td>
<td>19.4 bn €</td>
</tr>
<tr>
<td>E00-E90 Endocrine, nutritional and metabolic diseases</td>
<td>1.8 bn €</td>
<td>2.5 bn €</td>
<td>3.2 bn €</td>
<td>4.1 bn €</td>
</tr>
<tr>
<td>F00-F99 Mental and behavioural disorders</td>
<td>7.0 bn €</td>
<td>8.4 bn €</td>
<td>9.9 bn €</td>
<td>11.7 bn €</td>
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<tr>
<td>G00-G99 Diseases of the nervous system</td>
<td>2.1 bn €</td>
<td>2.7 bn €</td>
<td>3.4 bn €</td>
<td>4.2 bn €</td>
</tr>
<tr>
<td>I00-I99 Diseases of the circulatory system</td>
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<td>18.3 bn €</td>
<td>24.3 bn €</td>
<td>31.8 bn €</td>
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<tr>
<td>J00-J99 Diseases of the respiratory system</td>
<td>3.6 bn €</td>
<td>4.6 bn €</td>
<td>5.9 bn €</td>
<td>7.4 bn €</td>
</tr>
<tr>
<td>K00-K93 Diseases of the digestive system</td>
<td>5.9 bn €</td>
<td>7.6 bn €</td>
<td>9.7 bn €</td>
<td>12.1 bn €</td>
</tr>
<tr>
<td>M00-M99 Diseases of the musculoskeletal system and connective tissue</td>
<td>7.0 bn €</td>
<td>9.0 bn €</td>
<td>11.4 bn €</td>
<td>13.8 bn €</td>
</tr>
</tbody>
</table>
Conclusion

- Ageing of the population will increase the demand for inpatient hospital services by 12% and associated costs, respectively.
- The highest increases are expected in cardiovascular as well as endocrine, nutritional and metabolic diseases with 33% and 25%.
- Further research is needed to estimate the impact of the demographic change on other health care sectors such as outpatient and inpatient longterm care.
- It is advisable to include several developments in the projection, e.g. progress in medical technology.
Thanks for your attention!

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